

=> d his

(FILE 'USPAT' ENTERED AT 15:48:18 ON 27 OCT 96)

SET PAGE SCROLL

L1	0 S ULTRA-VIOLET (P) SENSOR (P) BILL
L2	42 S ULTRA-VIOLET (3A) SENSOR
L3	95 S 194/207/CCLS
L4	35 S 194/303/CCLS
L5	300 S 209/534/CCLS
L6	56 S 209/578/CCLS
L7	120 S 209/577/CCLS
L8	131 S 209/576/CCLS
L9	211 S 209/583/CCLS
L10	501 S 250/461.1/CCLS
L11	507 S 250/372/CCLS
L12	3 S ULTRAVIOLET (P) SENSOR (P) BILL
L13	7 S ULTRAVIOLET (P) DETECT? (P) BILL

=>

=> s currency (p) discriminat?  
2154 CURRENCY  
45066 DISCRIMINAT?  
L1 78 CURRENCY (P) DISCRIMINAT?  
=> s l1 and ultraviolet  
59165 ULTRAVIOLET  
L2 2 L1 AND ULTRAVIOLET  
=> d 12 1-2

1. 5,283,422, Feb. 1, 1994, Information transfer and use, particularly with respect to counterfeit detection; Leonard Storch, et al., 235/375, 437 [IMAGE AVAILABLE]

2. 4,814,589, Mar. 21, 1989, Information transfer and use, particularly with respect to objects such as gambling chips; Leonard Storch, et al., 235/375; 211/49.1; 235/454, 462, 486, 494; 250/570; 340/323R; 341/50; 356/383; 377/8 [IMAGE AVAILABLE]  
=> d 12 1 kwic

US PAT NO: 5,283,422 [IMAGE AVAILABLE]

L2: 1 of 2

SUMMARY:

BSUM(44)

Code . . . plurality of illuminating devices or by ambient light, etc. The optical energy could be laser light, visible light, infrared light, \*\*ultraviolet\*\* light, etc. The above and other reading means may include discrete reading elements or a matrix of reading elements.

DETDESC:

DETD(96)

FIG. . . . colors, by any means of creating two differing reactions to light of various characteristics such as frequency, e.g., infrared or \*\*ultraviolet\*\*, etc. As depicted schematically, the photosensitive devices 93 are disposed and spaced so that each one may receive light energy. . .

DETDESC:

DETD(158)

Another possible application for code 350 is machine-readable coding for paper \*\*currency\*\*, commercial paper, checks, etc. (To machine read \*\*currency\*\*, the bills may be presented to reading apparatus in a stack, and means are provided to separate the bills, or. . . be used to define the extent of the full code L in a one-way reading environment. With respect to paper \*\*currency\*\* 355 as shown in FIG. 22A, one-way reading only may suffice in that coding 350 could be printed, embossed etc. in more than one location on the \*\*currency\*\* bill in such a manner that no matter what the orientation of the bill in a stack of bills, the. . . of the full code were stretched or shrunk or scanned quickly or slowly etc., as described below. Additional forms of \*\*discrimination\*\*, as described below, may be employed as well.

DETDESC:

DETD(173)

For . . . code elements each, similar to a (small) checker board. Using the coding/decoding system as just described may be preferred for **\*\*currency\*\***, for example, where many code elements (of relatively large lateral extent) may be required and it may be more convenient. . . . code elements in them, assuming there was a black code element in each of the four sides and/or other appropriate **\*\*discrimination\*\*** used. Such **\*\*discrimination\*\*** thus provided, the code may be referenced to any or all of the four corners, or a fabricated starting point,. . . .  
=> d 12 2 kwic

US PAT NO: 4,814,589 [IMAGE AVAILABLE]

L2: 2 of 2

SUMMARY:

BSUM(44)

Code . . . plurality of illuminating devices or by ambient light, etc. The optical energy could be laser light, visible light, infrared light, **\*\*ultraviolet\*\*** light, etc. The above and other reading means may include discrete reading elements or a matrix of reading elements.

DETDESC:

DETD(117)

FIG. . . . colors, by any means of creating two differing reactions to light of various characteristics such as frequency, e.g., infrared or **\*\*ultraviolet\*\***, etc. As depicted schematically, the photosensitive devices 93 are disposed and spaced so that each one may receive light energy. . . .

DETDESC:

DETD(179)

Another possible application for code 350 is machine-readable coding for paper **\*\*currency\*\***, commercial paper, checks, etc. (To machine read **\*\*currency\*\***, the bills may be presented to reading apparatus in a stack, and means are provided to separate the bills, or. . . . be used to define the extent of the full code L in a one-way reading environment. With respect to paper **\*\*currency\*\*** 355 as shown in FIG. 22A, one-way reading only way suffice in that coding 350 could be printed, embossed etc. in more than one location on the **\*\*currency\*\*** bill in such a manner that no matter what the orientation of the bill in a stack of bills, the. . . . of the full code were stretched or shrunk or scanned quickly or slowly etc., as described below. Additional forms of **\*\*discrimination\*\***, as described below, may be employed as well.

DETDESC:

DETD(194)

For . . . code elements each, similar to a (small) checker board. Using the coding/decoding system as just described may be preferred for **\*\*currency\*\***, for example, where many code elements (of relatively large

lateral extent) may be required and it may be more convenient. . . .  
code elements in them, assuming there was a black code element in each of  
the four sides and/or other appropriate \*\*discrimination\*\* used. Such  
\*\*discrimination\*\* thus provided, the code may be referenced to any or  
all of the four corners, or a fabricated starting point,. . . .

=> s ultraviolet light

59165 ULTRAVIOLET

524825 LIGHT

L3 22002 ULTRAVIOLET LIGHT

(ULTRAVIOLET(W)LIGHT)

=> s l3 and currency

2154 CURRENCY

L4 53 L3 AND CURRENCY

=> s l4 and discriminat?

45066 DISCRIMINAT?

L5 6 L4 AND DISCRIMINAT?

=> d l5 1-6

1. 5,283,422, Feb. 1, 1994, Information transfer and use, particularly  
with respect to counterfeit detection; Leonard Storch, et al., 235/375,  
437 [IMAGE AVAILABLE]

2. 4,827,395, May 2, 1989, Manufacturing monitoring and control systems;  
Frank W. Anders, et al., 364/138; 340/572, 679, 825.54, 825.72; 342/44;  
364/468, 474.37, 551.02 [IMAGE AVAILABLE]

3. 4,814,589, Mar. 21, 1989, Information transfer and use, particularly  
with respect to objects such as gambling chips; Leonard Storch, et al.,  
235/375; 211/49.1; 235/454, 462, 486, 494; 250/570; 340/323R; 341/50;  
356/383; 377/8 [IMAGE AVAILABLE]

4. 4,656,463, Apr. 7, 1987, LIMIS systems, devices and methods; Frank W.  
Anders, et al., 340/572, 521, 541, 825.54, 870.09; 400/77 [IMAGE  
AVAILABLE]

5. 4,166,540, Sep. 4, 1979, Document sorter utilizing cascaded sorting  
steps; Robert Marshall, 209/555, 583; 235/375; 356/71 [IMAGE AVAILABLE]

6. 3,618,765, Nov. 9, 1971, COUNTERFEIT \*\*CURRENCY\*\* DETECTOR; Bernard  
William Cooper, et al., 209/534, 546, 567, 578, 942 [IMAGE AVAILABLE]  
=> d l5 6 ab

US PAT NO: 3,618,765 [IMAGE AVAILABLE]

L5: 6 of 6

#### ABSTRACT:

The apparatus disclosed detects counterfeit U.S. paper \*\*currency\*\* in a  
manner which is simple, quick, and requires little or not skill. Almost  
all official U.S. paper \*\*currency\*\* does not exhibit a chromamorphic  
response other than that naturally attributable to the cotton or linen  
stock. Almost all counterfeit \*\*currency\*\* will exhibit a definite  
chromamorphic response in the blue range when activated by properly  
filtered \*\*ultraviolet\*\* \*\*light\*\*. Any suspected counterfeits are  
further subjected to a test for determining the magnetic characteristics  
of the ink. Genuine U.S. paper \*\*currency\*\* for the last 25 years uses  
black ink which incorporates a magnetic pigment.

=> file jpoabs

FILE 'JPOABS' ENTERED AT 16:44:22 ON 29 OCT 95

\* \* \* \* \*  
 \* J A P A N E S E P A T E N T A B S T R A C T S \*  
 \*  
 \* CURRENTLY, DATA IS LOADED THROUGH THE ABSTRACT PUBLICATION \*  
 \* DATE OF DECEMBER 26, 1994 \*  
 \* THE LATEST GROUPS RECEIVED ARE: C1292 E1651, M1731 & P1851. \*  
 \* \* \* \* \*

=> s ultraviolet and (currency or bill#)

18321 ULTRAVIOLET

284 CURRENCY

1129 BILL#

L6 5 ULTRAVIOLET AND (CURRENCY OR BILL#)

=> d 16 1-5

1. 04-332910, Nov. 19, 1992, MAGNETIC CARD; KOJI NAGAKI, G11B 5/80; B32B 27/30; G11B 5/704

2. 01-38283, Feb. 8, 1989, THERMAL TRANSFER MATERIAL; TSUNEO TANAKA, B41M 5/26

3. 62-25180, Feb. 3, 1987, COMPOSITION FOR PREVENTING \*\*BILL\*\* STICKING; TORU TAKAMURA, C09D 5/00; //B05D 5/08

4. 61-136226, Jun. 24, 1986, MANUFACTURE OF OHMIC ELECTRODE; HARUHISA KINOSHITA, et al., H01L 21/28; H01L 29/72

5. 56-139959, Oct. 31, 1981, PREPARATION OF DOCTOR FOR COPPERPLATE PRINTING MACHINE; YASUYUKI ABE, et al., B41F 9/10

=> d 12 1-2

1. 5,283,422, Feb. 1, 1994, Information transfer and use, particularly with respect to counterfeit detection; Leonard Storch, et al., 235/375, 437 [IMAGE AVAILABLE]

2. 4,814,589, Mar. 21, 1989, Information transfer and use, particularly with respect to objects such as gambling chips; Leonard Storch, et al., 235/375; 211/49.1; 235/454, 462, 486, 494; 250/570; 340/323R; 341/50; 356/383; 377/8 [IMAGE AVAILABLE]

=> d 15 1-6

1. 5,283,422, Feb. 1, 1994, Information transfer and use, particularly with respect to counterfeit detection; Leonard Storch, et al., 235/375, 437 [IMAGE AVAILABLE]
2. 4,827,395, May 2, 1989, Manufacturing monitoring and control systems; Frank W. Anders, et al., 364/138; 340/572, 679, 825.54, 825.72; 342/44; 364/468, 474.37, 551.02 [IMAGE AVAILABLE]
3. 4,814,589, Mar. 21, 1989, Information transfer and use, particularly with respect to objects such as gambling chips; Leonard Storch, et al., 235/375; 211/49.1; 235/454, 462, 486, 494; 250/570; 340/323R; 341/50; 356/383; 377/8 [IMAGE AVAILABLE]
4. 4,656,463, Apr. 7, 1987, LIMIS systems, devices and methods; Frank W. Anders, et al., 340/572, 521, 541, 825.54, 870.09; 400/77 [IMAGE AVAILABLE]
5. 4,166,540, Sep. 4, 1979, Document sorter utilizing cascaded sorting steps; Robert Marshall, 209/555, 583; 235/375; 356/71 [IMAGE AVAILABLE]
6. 3,618,765, Nov. 9, 1971, COUNTERFEIT \*\*CURRENCY\*\* DETECTOR; Bernard William Cooper, et al., 209/534, 546, 567, 578, 942 [IMAGE AVAILABLE]

=> d 113 1-7

1. 5,503,904, Apr. 2, 1996, Invisible information recorded medium; Kazuo Yoshinaga, et al., 428/195, 199, 206, 212, 690, 913 [IMAGE AVAILABLE]

2. 5,476,169, Dec. 19, 1995, Bill discriminating apparatus for bill handling machine; Yuji Takarada, et al., 194/207; 250/461.1 [IMAGE AVAILABLE]

3. 4,558,224, Dec. 10, 1985, Counterfeit bill warning device; Jerome T. Gober, 250/461.1 [IMAGE AVAILABLE]

4. 4,313,598, Feb. 2, 1982, Self-compensating stripper assembly for document handling and counting apparatus; John A. DiBlasio, 271/124, 37, 119 [IMAGE AVAILABLE]

5. 4,277,774, Jul. 7, 1981, Bill discriminating apparatus; Kiyoshi Fujii, et al., 382/135; 194/207; 235/454; 250/372, 556; 382/162, 218, 321 [IMAGE AVAILABLE]

6. 4,275,874, Jun. 30, 1981, Extended stacker; John A. DiBlasio, 271/4.1, 178, 187, 219, 315; 902/17 [IMAGE AVAILABLE]

7. 4,114,804, Sep. 19, 1978, Counterfeit detection means for paper counting; Alan P. Jones, et al., 235/476; 194/207; 235/419, 449, 468; 250/372; 902/7, 17 [IMAGE AVAILABLE]

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=> d 112 1-3

1. 5,476,169, Dec. 19, 1995, Bill discriminating apparatus for bill handling machine; Yuji Takarada, et al., 194/207; 250/461.1 [IMAGE AVAILABLE]

2. 4,313,598, Feb. 2, 1982, Self-compensating stripper assembly for document handling and counting apparatus; John A. DiBlasio, 271/124, 37, 119 [IMAGE AVAILABLE]

3. 4,275,874, Jun. 30, 1981, Extended stacker; John A. DiBlasio, 271/4.1, 178, 187, 219, 315; 902/17 [IMAGE AVAILABLE]

=> d 12 1, 2, 16, 29, 42

1. 5,500,531, Mar. 19, 1996, Sensor for detecting ultra-violet rays;  
Jong U. Bu, 250/372, 374 [IMAGE AVAILABLE]

2. 5,418,361, May 23, 1995, Optical displacement sensor employing reflected light of four wavelengths to determine displacement and the refractive index of the medium; Robert A. Pinnock, et al., 250/227.21, 227.23 [IMAGE AVAILABLE]

16. 5,021,668, Jun. 4, 1991, Electro-optical middle ultra-violet sensors;  
Eli Talmore, et al., 250/372 [IMAGE AVAILABLE]

29. 4,493,994, Jan. 15, 1985, Detecting the condition of a sheet; Graham H. Hilton, 250/223R; 209/534; 250/559.12, 559.42 [IMAGE AVAILABLE]

42. 3,838,282, Sep. 24, 1974, SENSORS; Philip Brian Harris, 250/372, 461.1, 487.1; 252/301.4F, 301.6S [IMAGE AVAILABLE]

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